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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,747	05/12/2005	Manfred A.A Lupke	SWH-11817US	9033
7590 Dennison Associates 133 Richmond Street West Toronto, ON MSH 2L7 CANADA			EXAMINER LEYSON, JOSEPH S	
			ART UNIT 1722	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/534,747		LUPKE ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Joseph Leyson		1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 13-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-28 is/are rejected.
- 7) ☒ Claim(s) 19-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required.

Figures 2-5 appear to show the trough and the cresting mounting portion being formed in and integral with the mold block, as recited by claims 13-24; and appear to show the mold block including integral trough portions, as recited by claims 25-28; but this subject matter is NOT disclosed in the disclosure. The examiner suggests that this subject matter be included in the disclosure.

The subject matter of claim 16 appears to be shown in figures 4 and 5 but is NOT disclosed in the disclosure. The examiner suggests that the projecting shoulder and corresponding recess be included in the disclosure and labeled in figures 4 and 5.

The subject matter of claim 17 appears to be shown in figures 4 and 6 but is NOT disclosed in the disclosure. The examiner suggests that the subject matter of claim 17, particularly the opposed ends, be included in the disclosure and labeled in figures 4 and 6.

The subject matter of claim 27 appears to be shown in figures 4 and 6 but is NOT disclosed in the disclosure. The examiner suggests that the subject matter of claim 27, particularly the end faces, be included in the disclosure and labeled in figures 4 and 6.

### ***Claim Objections***

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2. Claims 19-24 are objected to because of the following informalities:

in claim 19, "into of" should be changed to --into--, for proper idiomatic language;

in claim 20, "then" should be changed to --the--, for proper spelling;

in claim 21, "great" should be changed to --greater--, for proper idiomatic language; and

in claim 24, "molding means" should be changed to --holding means--, for antecedent basis clarity.

Appropriate correction is required.

3. Claims 20 and 22-24 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 20 only further recites plugs and a (second) crest forming part which are used in the system. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987); see MPEP 2114. "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 75 F.2d 996, 25 USPQ 69 (CCPA

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1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). See MPEP 2115. Thus, the plugs and the (second) crest forming part should be positively claimed as included in the system.

Claim 22 does not recite further structure or structural relationships which further limit the molding (apparatus) system of claim 20 and only further recites intended use of the claimed apparatus. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987); see MPEP 2114. "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). See MPEP 2115.

Claim 23 recites "cooling and shape holding means", and claim 24 recites "first and second cooling plugs". However, claims 23 and 24 are dependent upon claim 20 which already recites first and second cooling plugs.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 14-19, 26 and 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The subject matter of claims 14, 15, 18 and 28 is new matter. The original specification (figs. 4 and 5; p. 6, lines 22-30) discloses that figures 4 and 5 show that the mold block sections include sophisticated vacuum and cooling channels required to first shape and then cool the plastic at the faces of the mold blocks and that the interchangeability of the face attachments at the mounting surfaces 12 of the mold block sections in no way impedes or affects either the vacuum or the cooling channels. However, after reviewing figures 4 and 5, it is not clear what elements are the vacuum and cooling channels, or how the vacuum and cooling channels operate relative to the other apparatus elements. The original specification does NOT disclose a vacuum channel located within the mold block beneath the trough and the crest mounting portion of the profiled face of the mold block, as recited by claim 14; does NOT disclose vacuum connected to the trough, as recited by claim 15; does NOT disclose a cooling channel located within the mold block beneath the trough and the crest mounting portion of the profiled face of the mold block, as recited by claim 18; and does NOT disclose the trough portions of each mold block including vacuum slots for drawing molten plastic into said trough portions.

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The subject matter of claim 19 is new matter. The original specification (p. 6, line 33, to p. 7, line 13; figs. 4-6) discloses a bracket 35 having arms (or legs) 37, 39, wherein a recess 10 is provided in the mold block section for receiving the leg 39, and a recess 16 is provided in the face attachment 15 to receive the leg 37. The original disclosure does NOT disclose a recess in the trough and the crest mounting portion of the profiled face of the mold block, or a clip which hooks into the recess and which further hooks into a recess of the selected crest forming part, the clip further securing into of the trough and the crest forming portion of the profiled face at the crest mounting portion by means of a mechanical securing member, as recited by claim 19. Note that figures 4-6 do NOT show any recess in the trough, a clip which hooks into the recesses, or a clip securing into of the trough and the crest forming portion of the profiled face at the crest mounting portion.

Claim 26 recites that the first set of face attachments are of a first cross sectional dimension which is less than a cross sectional dimension of the second set of face attachments, which is new matter. The original specification (p. 5, lines 21-23) discloses that the first cresting forming attachment is longer than the second cresting forming attachment. The original specification does NOT disclose that any cross sectional dimension of the first set can be less than any cross sectional dimension of the second set.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 15-17, 20 and 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites "said vacuum claimed" which lacks antecedent basis making it unclear to what it refers.

Claim 20 recites "a first cooling plug which is used in the system when the crest forming part is fitted to the crest mounting portion and a second cooling plug which is used in the system in replacement of the first cooling plug when the crest forming part is fitted to the mounting portion, the crest forming part being longer than then crest forming part and the cooling plug being of smaller diameter than the cooling plug" which cannot be clearly understood. The examiner believes applicants are trying to correlate first and second cooling plugs to first and second crest forming parts. The examiner suggests that all instances of cooling plug be related to first or second, and that all instances of crest forming part be related to first or second.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 13, 16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over German reference (DE 200 09 030).

German reference (DE 200 09 030) discloses a molding system including a plurality of mold blocks 9 which circulate and move along a molding path to form a mold tunnel (i.e., fig. 1) to form double wall plastic pipe having an outer wall with corrugations which set an outside diameter of the pipe corrugations and an inner wall around a bore through the pipe (i.e., figs. 7 and 8), and the mold blocks 9 having profiled faces which determine shape of the pipe. Each mold block 9 includes a mounting surface (i.e., fig. 2), and the system further includes a plurality of mold block face attachments 18, 19, 21, 23, 25 which interchangeably mount to the mounting surface for reconfiguring of the profiled faces of the mold blocks 9 without replacing the mold blocks 9 (i.e., figs. 2-6). Note that, in fig. 5, if only the attachments 23 are reconfigured with the attachments 25, the profiled faces would be reconfigured in profile between a first and a second face profile to vary both depth of the corrugations and diameter of the bore through the pipe without varying the external diameter of the pipe, and the profiled faces of the mold blocks 9 when configured with a first face profile 23 forming the pipe with a first corrugation depth and a first bore diameter and when configured with the second face

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profile 25 forming the pipe with a second corrugation depth greater than the first corrugation depth and a second bore diameter less than the first bore diameter. The inner wall of the pipe has a wall thickness that remains essentially constant when reconfiguring the profiled faces of the mold blocks between the first and second face profiles (i.e., figs. 7 and 8). The profiled faces of said mold blocks include alternating crests and troughs (i.e., figs. 3-6) to form the corrugations in the outer wall of the pipe. The attachments include first and second crest forming members 23, 25 for changing the height of the crests and trough forming members 18, 21 for changing the depth of the troughs (i.e., figs. 5 and 6), the first crest forming members 23 being shorter than the second crest forming members 25 and being used to provide the first face profile on the mold blocks, the second crest forming members 25 being longer than the first crest forming members 23 and being used to provide the second face profile on the mold blocks 9. The crest forming members 23, 25 are mounted in crest mounting portions formed in and integral with the mold blocks 9 (i.e., figs. 5 and 6). The crest mounting portions include a projecting shoulder (i.e., the projecting shoulders to either side of slot 13 in figs. 5 and 6) received in a corresponding recess (i.e., the recesses to either side of undercut base 22) of the crest forming parts 23, 25 to locate the cresting forming parts 23, 25 in the mold block 9 along a length of the crest forming parts 23, 25 (i.e., figs. 5 and 6). However, German reference (DE 200 09 030) does not disclose the troughs being formed in and integral with the mold block.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the interchangeable trough forming members of German

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reference (DE 200 09 030) to be formed in and integral with the mold blocks because it would be well within an artisan of ordinary skill to make a one piece construction instead of a separable structure, In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over German reference (DE 200 09 030) as applied to claims 13, 16 and 21 above, and further in view of either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

German reference (DE 200 09 030) discloses the molding system substantially as claimed, as mentioned above, except for recesses, a clip and a mechanical securing member, as recited by the instant claim.

Hegler (U.S. Patent 6,457,965) discloses fastening means including recesses in mold blocks 29, 29' and clips defined by heads 35 which hook into the recesses and which further hook into recesses of profile adjustment attachments 30, 30', and mechanical securing members 34 (i.e., the screw bolt portion as shown in fig. 2).

Chittenden et al. (U.S. Patent 3,380,121) disclose fastening means including recesses in mold blocks 10 and clips 22, 23 which hook into the recesses and which further hook into recesses of profile adjustment attachments 16, 18, and mechanical securing members 24.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the apparatus of German reference (DE 200 09 030) with the fastening means of either Hegler (U.S. Patent 6,457,965) or Chittenden et

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al. (U.S. Patent 3,380,121) because such a modification would provide an alternative means for fastening the profile adjustment attachments to the mold blocks, as disclosed by either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

12. Claims 20 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over German reference (DE 200 09 030) as applied to claims 13, 16 and 21 above, and further in view of Lupke et al. (U.S. Patent 6,155,813).

German reference (DE 200 09 030) discloses the claimed apparatus system substantially as claimed, as mentioned above, except for first and second cooling plugs. Note that the inner diameter of the double wall pipe is changed when the crest forming parts have different lengths (i.e., figs. 5-8).

Lupke et al. (U.S. Patent 6,155,813) disclose an apparatus system for making double walled plastic pipe including a cooling plug 27 for cooling the pipe, the cooling plug 27 is dimensioned relative to the mold tunnel to urge the inner wall 22 of the pipe against the outer wall 18 while in a mold tunnel and to define the inner diameter of the double walled plastic pipe (i.e., col. 1, lines 25-50; and col. 3, lines 5-18).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the molding system of German reference (DE 200 09 030) with a cooling plug because such a modification would cool the pipe and urge the inner wall of the pipe into the outer wall of the pipe while in the mold tunnel, as disclosed by Lupke et al. (U.S. Patent 6,155,813), and to further modify the apparatus system of German reference (DE 200 09 030) with first and second cooling plugs of different diameter because German reference (DE 200 09 030) discloses changing the

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mold tunnel dimensions with the attachments and because Lupke et al. (U.S. Patent 6,155,813) disclose that cooling plugs are dimensioned relative to the mold tunnel. In other words, if the mold tunnel dimensions are changed, then the cooling plug would be correspondingly changed since its dimensions are dependent upon the mold tunnel dimensions as disclosed by Lupke et al. (U.S. Patent 6,155,813). Note that the different internal diameters of the pipes in figures 7 and 8 of German reference (DE 200 09 030) would require cooling plugs of corresponding different diameter, as taught by Lupke et al. (U.S. Patent 6,155,813).

13. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over German reference (DE 200 09 030) as applied to claims 13, 16 and 21 above, and further in view of Lupke et al. (U.S. Patent 6,155,813) taken together with either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

German reference (DE 200 09 030) discloses the claimed molding system substantially as claimed, as mentioned above except for first and second cooling plugs, or for recesses, as recited by the instant claim. Note that the inner diameter of the double wall pipe of German reference (DE 200 09 030) is changed when the crest forming parts have different lengths (i.e., figs. 5-8).

Lupke et al. (U.S. Patent 6,155,813) disclose an apparatus system for making double walled plastic pipe including a cooling plug 27 for cooling the pipe, the cooling plug 27 is dimensioned relative to the mold tunnel to urge the inner wall 22 of the pipe against the outer wall 18 while in a mold tunnel and to define the inner diameter of the double walled plastic pipe (i.e., col. 1, lines 25-50; and col. 3, lines 5-18).

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Hegler (U.S. Patent 6,457,965) discloses fastening means including recesses in mold blocks 29, 29' and clips defined by heads 35 which hook into the recesses and which further hook into recesses of profile adjustment attachments 30, 30', and mechanical securing members 34 (i.e., the screw bolt portion as shown in fig. 2).

Chittenden et al. (U.S. Patent 3,380,121) disclose fastening means including recesses in mold blocks 10 and clips 22, 23 which hook into the recesses and which further hook into recesses of profile adjustment attachments 16, 18, and mechanical securing members 24.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the molding system with a cooling plug because such a modification would cool the pipe and urge the inner wall of the pipe into the outer wall of the pipe while in the mold tunnel, as disclosed by Lupke et al. (U.S. Patent 6,155,813), and to further modify the molding system with first and second cooling plugs because German reference (DE 200 09 030) discloses changing the mold tunnel dimensions with the attachments and because Lupke et al. (U.S. Patent 6,155,813) disclose that cooling plugs are dimensioned relative to the mold tunnel. In other words, if the mold tunnel dimensions are changed, then the cooling plug would be correspondingly changed since its dimensions are dependent upon the mold tunnel dimensions as disclosed by Lupke et al. (U.S. Patent 6,155,813). Note that the different internal diameters of the pipes in figures 7 and 8 of German reference (DE 200 09 030) would require cooling plugs of corresponding different diameter, as taught by Lupke et al. (U.S. Patent 6,155,813). And, it would have been obvious to one of ordinary skill in

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the art, at the time the invention was made, to further modify the apparatus with the fastening means of either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121) because such a modification would provide an alternative means for fastening the profile adjustment attachments to the mold blocks, as disclosed by either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

14. Claims 13-16, 18, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegler et al. (U.S. Patent 4,492,551) in view of German reference (DE 200 09 030).

Hegler et al. (U.S. Patent 4,492,551) disclose a molding system including a plurality of mold-blocks 2, 2' which move along a molding path to form corrugated plastic pipe, each mold block 2, 2' having a profiled face which determines shape, of the pipe, the profiled face including troughs and crests (i.e., figs. 4 and 5) formed in and integral with the mold blocks 2, 2', a vacuum channel 28, 28' located within the mold blocks 2, 2' beneath the troughs and the crests of the profiled faces of the mold blocks, vacuum channels 28, 28' being connected to the troughs by vacuum slots 29, and cooling channels 33, 33', 35, 35' located within the mold blocks beneath the troughs and the crests. However, Hegler et al. (U.S. Patent 4,492,551) does not disclose cresting mounting portions, or crest forming parts, as recited by the instant claims.

German reference (DE 200 09 030) discloses a molding system including a plurality of mold blocks 9 which circulate and move along a molding path to form a mold tunnel (i.e., fig. 1) to form double wall plastic pipe having an outer wall with corrugations which set an outside diameter of the pipe corrugations and an inner wall around a bore

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through the pipe (i.e., figs. 7 and 8), and the mold blocks 9 having profiled faces which determine shape of the pipe. Each mold block 9 includes a mounting surface (i.e., fig. 2), and the system further includes a plurality of mold block face attachments 18, 19, 21, 23, 25 which interchangeably mount to the mounting surface for reconfiguring of the profiled faces of the mold blocks 9 without replacing the mold blocks 9 (i.e., figs. 2-6). Note that, in fig. 5, if only the attachments 23 are reconfigured with the attachments 25, the profiled faces would be reconfigured in profile between a first and a second face profile to vary both depth of the corrugations and diameter of the bore through the pipe without varying the external diameter of the pipe, and the profiled faces of the mold blocks 9 when configured with a first face profile 23 forming the pipe with a first corrugation depth and a first bore diameter and when configured with the second face profile 25 forming the pipe with a second corrugation depth greater than the first corrugation depth and a second bore diameter less than the first bore diameter. The inner wall of the pipe has a wall thickness that remains essentially constant when reconfiguring the profiled faces of the mold blocks between the first and second face profiles (i.e., figs. 7 and 8). The profiled faces of said mold blocks include alternating crests and troughs (i.e., figs. 3-6) to form the corrugations in the outer wall of the pipe. The attachments include first and second crest forming members (parts) 23, 25 for changing the height of the crests and trough forming members 18, 21 for changing the depth of the troughs (i.e., figs. 5 and 6), the first crest forming members 23 being shorter than the second crest forming members 25 and being used to provide the first face profile on the mold blocks, the second crest forming members 25 being longer than

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the first crest forming members 23 and being used to provide the second face profile on the mold blocks 9. The crest forming members 23, 25 are mounted in crest mounting portions formed in and integral with the mold blocks 9 (i.e., figs. 5 and 6). The crest mounting portions include a projecting shoulder (i.e., the projecting shoulders to either side of slot 13 in figs. 5 and 6) received in a corresponding recess (i.e., the recesses to either side of undercut base 22) of the crest forming parts 23, 25 to locate the cresting forming parts 23, 25 in the mold block 9 along a length of the crest forming parts 23, 25 (i.e., figs. 5 and 6).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the molding system of Hegler et al. (U.S. Patent 4,492,551) with the cresting mounting portions and the crest forming parts of German reference (DE 200 09 030) because such a modification would enable the profile face to be changed without replacing the mold block, as disclosed by German reference (DE 200 09 030: i.e., pp. 1-2). Note that molding double wall pipe is well known and conventional in the art as disclosed by German reference (DE 200 09 030: i.e., pp. 1-2).

15. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegler et al. (U.S. Patent 4,492,551) in view of German reference (DE 200 09 030) as applied to claims 13-16, 18, 21 and 22 above, and further in view of either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

Hegler et al. (U.S. Patent 4,492,551) and German reference (DE 200 09 030) disclose the molding system substantially as claimed, as mentioned above, except for recesses, a clip and a mechanical securing member, as recited by the instant claim.

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Hegler (U.S. Patent 6,457,965) discloses fastening means including recesses in mold blocks 29, 29' and clips defined by heads 35 which hook into the recesses and which further hook into recesses of profile adjustment attachments 30, 30', and mechanical securing members 34 (i.e., the screw bolt portion as shown in fig. 2).

Chittenden et al. (U.S. Patent 3,380,121) disclose fastening means including recesses in mold blocks 10 and clips 22, 23 which hook into the recesses and which further hook into recesses of profile adjustment attachments 16, 18, and mechanical securing members 24.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the apparatus with the fastening means of either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121) because such a modification would provide an alternative means for fastening the profile adjustment attachments to the mold blocks, as disclosed by either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

16. Claims 20, 23-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hegler et al. (U.S. Patent 4,492,551) in view of German reference (DE 200 09 030) as applied to claims 13-16, 18, 21 and 22 above, and further in view of Lupke et al. (U.S. Patent 6,155,813).

Hegler et al. (U.S. Patent 4,492,551) and German reference (DE 200 09 030) discloses the claimed molding system substantially as claimed, as mentioned above except for first and second cooling plugs. Note that the inner diameter of the double

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wall pipe of German reference (DE 200 09 030) is changed when the crest forming parts have different lengths (i.e., figs. 5-8).

Lupke et al. (U.S. Patent 6,155,813) disclose an apparatus system for making double walled plastic pipe including a cooling plug 27 for cooling the pipe, the cooling plug 27 is dimensioned relative to the mold tunnel to urge the inner wall 22 of the pipe against the outer wall 18 while in a mold tunnel and to define the inner diameter of the double walled plastic pipe (i.e., col. 1, lines 25-50; and col. 3, lines 5-18).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the molding system with a cooling plug because such a modification would cool the pipe and urge the inner wall of the pipe into the outer wall of the pipe while in the mold tunnel, as disclosed by Lupke et al. (U.S. Patent 6,155,813), and to further modify the molding system with first and second cooling plugs because German reference (DE 200 09 030) discloses changing the mold tunnel dimensions with the attachments and because Lupke et al. (U.S. Patent 6,155,813) disclose that cooling plugs are dimensioned relative to the mold tunnel. In other words, if the mold tunnel dimensions are changed, then the cooling plug would be correspondingly changed since its dimensions are dependent upon the mold tunnel dimensions as disclosed by Lupke et al. (U.S. Patent 6,155,813). Note that the different internal diameters of the pipes in figures 7 and 8 of German reference (DE 200 09 030) would require cooling plugs of corresponding different diameter, as taught by Lupke et al. (U.S. Patent 6,155,813).

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17. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hegler et al. (U.S. Patent 4,492,551) in view of German reference (DE 200 09 030) as applied to claims 13-16, 18, 21 and 22 above, and further in view of Lupke et al. (U.S. Patent 6,155,813) taken together with either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

Hegler et al. (U.S. Patent 4,492,551) and German reference (DE 200 09 030) discloses the claimed molding system substantially as claimed, as mentioned above except for first and second cooling plugs, or for recesses, as recited by the instant claim. Note that the inner diameter of the double wall pipe of German reference (DE 200 09 030) is changed when the crest forming parts have different lengths (i.e., figs. 5-8).

Lupke et al. (U.S. Patent 6,155,813) disclose an apparatus system for making double walled plastic pipe including a cooling plug 27 for cooling the pipe, the cooling plug 27 is dimensioned relative to the mold tunnel to urge the inner wall 22 of the pipe against the outer wall 18 while in a mold tunnel and to define the inner diameter of the double walled plastic pipe (i.e., col. 1, lines 25-50; and col. 3, lines 5-18).

Hegler (U.S. Patent 6,457,965) discloses fastening means including recesses in mold blocks 29, 29' and clips defined by heads 35 which hook into the recesses and which further hook into recesses of profile adjustment attachments 30, 30', and mechanical securing members 34 (i.e., the screw bolt portion as shown in fig. 2).

Chittenden et al. (U.S. Patent 3,380,121) disclose fastening means including recesses in mold blocks 10 and clips 22, 23 which hook into the recesses and which

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further hook into recesses of profile adjustment attachments 16, 18, and mechanical securing members 24.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the molding system with a cooling plug because such a modification would cool the pipe and urge the inner wall of the pipe into the outer wall of the pipe while in the mold tunnel, as disclosed by Lupke et al. (U.S. Patent 6,155,813), and to further modify the molding system with first and second cooling plugs because German reference (DE 200 09 030) discloses changing the mold tunnel dimensions with the attachments and because Lupke et al. (U.S. Patent 6,155,813) disclose that cooling plugs are dimensioned relative to the mold tunnel. In other words, if the mold tunnel dimensions are changed, then the cooling plug would be correspondingly changed since its dimensions are dependent upon the mold tunnel dimensions as disclosed by Lupke et al. (U.S. Patent 6,155,813). Note that the different internal diameters of the pipes in figures 7 and 8 of German reference (DE 200 09 030) would require cooling plugs of corresponding different diameter, as taught by Lupke et al. (U.S. Patent 6,155,813). And, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the apparatus with the fastening means of either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121) because such a modification would provide an alternative means for fastening the profile adjustment attachments to the mold blocks, as disclosed by either Hegler (U.S. Patent 6,457,965) or Chittenden et al. (U.S. Patent 3,380,121).

***Response to Arguments***

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18. Applicant's arguments with respect to the instant claims have been considered but are moot in view of the new ground(s) of rejection.

Applicants agree that an integral trough provides better or more effective cooling. However, such better or more effective cooling relative to an integral trough is NOT found in the original specification. Thus, this argument is merely an assertion without factual basis. Furthermore, the new grounds of rejection above show that cooling with integral troughs is well known and conventional in the art.

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Leyson whose telephone number is (571) 272-5061. The examiner can normally be reached on M-F 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gupta Yogendra can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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